Chapter 10

EMDR in Anorexia Nervosa: From a Theoretical Framework to the Treatment Guidelines

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Additional information is available at the end of the chapter

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Abstract

Studies on the risks and on the positive factors implied in the onset of anorexia nervosa (AN) have reported the role of an insecure or disorganized state of mind (SoM) with respect to attachment. We compare the effects of eyes movement desensitization and reprocessing (EMDR) approach with cognitive behavioral therapy (CBT) in the treatment of AN in terms of SoMs, reflective function (RF), and narrative coherence (Coh). Our results are part of a broader observational clinical comparative study of the two approaches, and it is based on the Adult Attachment Interview (AAI) outcomes. Differences in terms of belongingness to a secure group and an unsecure group before and after the treatments in EMDR and CBT group have been reported through McNemar's test. The generalized linear model (GLM) repeated-measures multivariate ANOVA (RM-MANOVA) has been selected. Our results suggest that EMDR allows an active reprocessing of traumatic memories related to family dynamics and to eating behaviors, which could enable a positive resolution of eating disorder (ED) symptoms. The emotional reprocessing of unresolved attachment issues can allow a better modulation of the control-related rigidity that is a commonality between AN patients.

Keywords: EMDR, anorexia, psychotherapy, eating disorders, reflective function, narrative coherence

1. Introduction

Anorexia nervosa (AN) has been described in 1978 by Bruch [1] as a "Golden Cage," the condition of being trapped in a perfection mask, threatened by a persistent sense of losing control. A deep anguish is expressed through a constant check on body image, on food, and on weight, to obtain a sense of independency and a definition of the self. Emotional and psychological suffering, along with the consequent interruptions of a coherent narrative that occur during the development process, generates a set of specific features, such as a misperception of body size, an impaired sense of satiety, and problems with personal relations and with the regulation of emotions and misconception of the sexual role [2]. The idea of dealing with overwhelming emotions can be frightening, and a strong control seems the only way to manage or avoid them.

In modern Western society, the frequency and severity of eating disorders (EDs) are becoming a severe and worrisome phenomenon, which, nowadays, is showing even worse long-term outcomes [3, 4]. The study of the developmental aspects in the etiopathogenetic evolution of EDs, it is essential to prevent, cure, and manage this debilitating form of suffering. EDs can be considered as a composite and eclectic psychiatric condition, affected by a social and cultural world, increasingly focused on the physical aspects and on the "cult of thinness" [2, 5]. In the last years, the constant access to the social platform and media is changing the social context. Internet multiplies exposure to contents that can, on the one hand, disturb the relationship with the body self-image and, on the other hand, worsen significantly the psychological functioning in people who already have a fragile personality structure. In particular, social media have recently been included among the factors that contribute to ED [6]. A vision that considers only the psychosocial aspect, however, seems to be reductive [2, 7]. Considering AN as a direct response to the mass media mandates can be misleading because, for example, ED (and specifically AN) appear to be cross-cultural [8].

To date, there are numerous interpretative models regarding the onset of AN, defining several orders of potentially interacting risks and maintenance factors. In terms of environmental factors at the macrosystem level, there is a higher incidence of AN in cultures or environments where art, fashion, and mass media spread the idea that thinness is a symbol of beauty, charm, health, and success [2, 9]. Focusing to microsystem, according to the studies of Stice conducted on a sample of adolescent girls [10], the development of an ED is influenced by some parenting attitudes as, for example, a familiar criticism on weight and search of mothers of thinness. Parenting bonding style is often characterized by low care and high control, with a percentage comprise between 8.6 and 12.9 of AN patients that describe the relation with caregivers as neglectful [11]. In this context, we underline two main key concepts, before introducing the concept of attachment. Firstly, it seems necessary to improve current theories that infer a direct causality between parental behaviors, in particular on the mother side, with the development of AN. Simplistic and linear theories potentially generate, in addition to an enormous sense of guilt, confusion on possible origins, and consequences of AN in the quality of life and in family relationships. Secondly, it is important to recognize the role of the family environment, without critical judgments and without reducing the source heterogeneity observed in AN patients.

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Pioneer in this context was the work of Minuchin, psychiatrist and family therapist, who in 1978 focused on the families of AN patients referring them as "psychosomatic" and describing them as stuck, imprisoned, characterized by excessive worrying and protection, rigidity, and with the habit to not solve, but rather avoid, conflicts [12]. Minuchin et al.'s work has provided over the years the foundations for research and for the treatment of EDs, influencing the scientific and therapeutic communities to consider families not only as a problem source but also as a possible source of resources and solutions.

In between micro- and macrosystem, the role of peer groups seems to have a potential role in the onset of ED. Conversations between teenagers regarding diets and weight can move from the simple exchange of information and advice, passing for the promotion of membership in the group, to regulatory standards. Moreover, the subjects of ridicule or exclusion show higher levels of body dissatisfaction, low self-esteem, and depressive symptoms [13].

While acknowledging the difficulty to distinguish between genetic and environmental factors in the family context, it seems that a part of influence on the genesis of the disorder is due to genetic factors and that 38–55% of monozygotic twins are more at risk of incurring in AN than in dizygotic [14, 15].

The interpretative models, as well as the therapeutic models of intervention, do not seem to be able to disregard a complex and multicausal vision, which takes into account the multiplicity of aspects involved in the onset of the disorder and root in the individual's history an important component of causality in the onset of an ED. Schmidt and Treasure [16] proposed a maintenance model of AN combining intra- and interpersonal aspects while many studies stress the importance of emotional factors in the onset and in the perpetration of the disorder. Studies concerning risks and positive factors implied in the onset of ED, for example, identify the importance of some individual and family risk factors such as deficit to the development of self-esteem, identity, and independence; the presence of pathologies in the cognitive sphere; and excessive concern on body weight. Moreover, in the families of ED patients, it is likely the presence of affective disorders, substance abuses, extreme criticisms, examples of eating disorders, and impaired attachment relationships between parents and children [17–19].

1.1. Attachment theory and anorexia nervosa

Compared to 20 years ago, when it was still reported the need to increase the scientific evidence of the link between attachment and the development of EDs [20], the literature that currently supports an influence of insecure attachment in the onset of EDs is very rich. Attachment insecurity represents a vulnerability factor related to anorexia, such as body mass index (BMI), dissatisfaction with body image, pressure to diet, and food restrictions [21–24].

Many studies emphasized how prolonged stress (abuse, physical or psychological maltreatment, neglect) experienced during early stages of life could cause the interruption of the development of self-regulatory processes and may lead to the onset of psychological deficits closely related to EDs [25–27]. In a study with anorexic children were seen a low dyadic reciprocity, high levels of maternal intrusiveness, frequent conflicts, the presence of negative emotions, and a lack of pleasure in the interactive patterns between mothers and children [28].

Schore [29, 30] reports that the relational traumas can be characterized by a conscious or unconscious shared fear-based interaction between the child and the caregiver. The author reports the effects of early trauma to the child self-organization focusing on the child-adult relation instead of specific events. Complex PTSD (C-PTSD) has been defined by Herman [31] as a clinical frame of the patients which had experienced a series of microtraumas (small T traumas, as defined by Shapiro [32], that reiterate in a considerable time span. The microtraumas can derive from several factors, such as emotional neglect, experiences of rejection, humiliation, and physical violence. This particular type of early and complex trauma is characterized by the paradoxical and simultaneous activation of both attack and defense systems. Consequently, the integrative function of consciousness can collapse increasing the child's fragility and the risk of the developing dissociative phenomena. The traumatic emotions dissociated from consciousness can also lead to different states of fragmented ego [33].

A definition of "traumatic development" [34] is related to the presence of a constant threat or danger within the attachment relation with the caregivers, from which it is not possible to escape. The effect of the microtraumas accumulates, resulting in a compromised individual development [35]. DSM-V [36] defines, instead, a "traumatic event" (Big T traumas) as a single or a few events of a short-time span in which the subject life, or the life of a beloved one, has been in danger (car accidents, natural disasters, sexual or physical abuse, terrorist activities, war, etc.). C-PTSD recognizes the painful consequences of strong emotions related to disturbing powerless experiences, which characterize each traumatic experience [34]. "Small T traumas" are much more common in nowadays society; still, they are more difficult to report clinically. To construct an efficient clinical framework, the emotional consequences of early stage relational traumas have to be well defined. The destabilizing consequences of continuous small T traumas can result into relevant and long-standing disorders.

In the disorganized attachment pattern, the caregiver's behavior may be characterized by frequent and frightening abusive attitudes causing the child to experience states of "fright without solution" that can lead to experience a growing and pervasive anguish and terror. The child is thus in the paradoxical situation of being terrorized by the secure base [34, 37].

These findings are in line with a recent study conducted by Keiser Permanente, the Adverse Childhood Experiences (ACEs) Study, which underlines how the exposure to Adverse Childhood Experiences (ACEs) including abuse, neglect, and household dysfunction is associated with multiple long-term physical and mental health problems [38, 39]. When adverse experiences remain unresolved and unprocessed over time and not metabolized by the brain, a "mnemonic network" is formed, mainly composed of all the perceptions, body sensations, emotions, and expectations linked to memories of traumatic events. In AN patients, a dysregulation of HPA axis activity seems to be present. Recent studies suggest that ACES may contribute to the emerging and maintaining process of this dysregulation [40, 41].

Some subjects with histories of traumatic events manifest little or no emotions linked to their relational traumas, and they tend to generalize such mechanism while interpreting the surrounding world. The negative and overwhelming emotions related to traumatic stresses are extremely difficult to manage; for this reason, people might initiate ED behaviors (such as self-starvation, overeating, and vomiting) as a coping strategy [25]. Once triggered, both

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dissociative reactions and alterations in eating behaviors tend to persist with considerable impact on physical, emotional, and relational development, leading to possible long-lasting pathological outcomes. In this perspective, the compulsive use of bingeing or the refusal of food can become an attempt to escape or regulate negative intolerable feelings or intrusive thoughts related to the traumatic memory. In many studies, Rhodes and Kroger [42] found higher levels of maternal overprotectiveness in childhood and higher levels of separation anxiety in the EDs sample of young women compared with a healthy control group. Other studies on samples of women with ED have shown that the most serious symptoms of childhood separation anxiety and styles of insecure attachment are preserved compared to samples of healthy women [19]. The family environment in which ED subjects grew appears to be characterized by a low level of cohesion and a low propensity for individual growth: It is therefore likely that these families have difficulties to sustain their children in the normal separation-individuation process [43]. Moreover, the presence of turbulence in the emotional processing in the caregivers, such as unresolved losses, can be transmitted to offspring becoming a risk factor in the development of AN [18].

Therapeutic approaches adopted in current clinical settings for EDs, often do not deal with past traumatic experiences, focusing more on the present and on behavioral symptoms. The risk is to neglect developmental factors that could trigger the maintenance of the vicious circle of AN. It is thus evident the requirement, in a therapeutic approach, to consider factors of the life story of the patient, especially focusing on the attachment. The impairment might have triggered the dissociative behavior leading to specific controlling strategies. Focusing on the attachment allows a psychotherapist to emphasize and understand the role of the control on the patient sense of self-protection.

1.1.1. The emerging of the control part

Typically, AN patients are violent self-criticists, intolerant to the slightest transgression of the rules, and with no compassion for themselves. In a kind of "emotional totalitarianism" [44], a continuous monitoring of weight and food assumes a dichotomous structure, such as been skinny/fat, good/bad, and powerful/powerless. There is no possibility to explore the world without encountering a severe internal or external judgment. Obsessive-compulsive traits [45] consist in a very high self-expectations and a self-imposed perfectionism. These characteristics are considered by international scientific literature as decisive for the preservation of the disease and for the resistance to its treatment [45–47]. Lawrence [48] has been one of the firsts to investigate the AN as a problem related to the control part. The fear to gain weight or to lose the management on the desire of food is the symptom that hides a deep terror. The emotional suffering can be considered as a component of the non-metabolized memories that consist in maladaptive sensations, beliefs, and images. Any present reminder can activate the non-metabolized memories, leading to dysfunctional emotional regulation and behavioral responses [26, 49]. AN patients consider the control of themselves an absolute must, while the lose of control is understood to be a complete and irreversible failure on a personal and moral level. The constant attention to the body and to the quantity of eaten food is completely debilitating, even if it provides an apparent control on the reality.

Self-imposed constrictions that do not derive from a social surrounding are a determinant factor for the preservation of the psychopathology and for the resistance to its treatment [46]. The control inhibits the skill to explore the interpersonal relations. The inner conflict in anorexic people lies between the desire to be perfect and the fear of the consequential expectations, between the fear to not be sufficient and the terror that no one will ever accept them in case of failure. These patients live in a constant ambivalence: On one side, they have the fear to achieve their ideals and on the other the fear to not reach them. The paradox of the control consists exactly in this: When one feels in despair for being out of control, the need to use this form of control compensation emerges. The control is therefore a central factor in the studies focused on the correlation between the ED and the difficulties to manage emotions. It is clearly involved in the mechanism of avoidance of negative effects, in the possibility of being generally self-aware, in the recognitions and acceptance of the related emotions, in the tendency towards impulsive behaviors, in the ritualization, in the abuse of stereotypes, and in the failure to recognize feasible strategies to manage and contain such behaviors.

In neurobiological research, it has been underlined how the alimentation in AN is connected with specific cerebral modifications that involve the neuronal network to manage the control. It has been observed that, in the AN patient's brain, it is present in a lower activation of specific areas of the limbic system, which is also involved in the elaboration of emotions. Higher brain activation, instead, has been detected in the areas related to the control, with an inhibition of appetite and on the general skill to define values. A 2013 study [50] compared the differences of the brain volume of AN patients and a reference group composed of healthy individuals. A consistent brain size reduction in the grey matter and in the white matter, with an increasing level of cerebrospinal fluid, has been reported in AN patients. The temporal and occipital lobes manifest a higher sensitivity, and a grey matter reduction in the group of patients currently affected by the psychopathology. Other studies reported further reductions in the brain volume, especially in the temporal and parietal cortex and the midbrain area. The modification in the brain network for the cognitive control seems to be partially responsible for the lack of mental flexibility in AN patients. In the study of Lao-Kaim et al.[51], it has been reported that people affected by AN have diffuse alterations of the executive functions. The reduced cognitive flexibility seems to be linked to an abnormal function of the front parietal, which manages the direction of the control, inwards or outwards. Frontal-striatal modifications have been reported to limit also the procedural knowledge. The two aspects suggest that the perseverations and the lack of flexibility characteristic of people affected by AN can block multiple process of higher order, from the learning ability to the control. These factors influence the patients at a lower cognitive level contributing to preserve the disorder.

The latest evidence obtained in neurobiology and the progressive establishment of the research on the attachment relations showed that possible ED sources are of traumatic nature and that early traumas can increase the vulnerability of children from dissociative disorders. The consequent generation of dissociative states can then result in difficult emotion management, leading to the generation of dysfunctional control strategies. Hereby, AN patients can reach the point to prefer to risk their life than give up their control [52].

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1.2. Therapeutic approaches

As reported in several studies, precise indications on the efficacy of AN treatment are limited [53–55].

In young patients, it seems that family-based treatments are the most effective [54–57]. A well-known approach in the scientific literature is the Maudsley family-based treatment (FBT). It combines cognitive behavioral therapy (CBT) with systemic-relational intervention, and it is an intensive outpatient treatment aimed to normalize the weight of adolescents affected by AN. The FBT is generally a short clinical program aimed to improve family functioning and to prepare families of adolescents with EDs to support the recovery of the weight in everyday life through educational activities and skills training [58].

In adult population, no specific psychotherapy approach can be considered as an elective method in treating AN, even if there is evidence regarding the efficacy of interpersonal psychotherapy (IPT) and cognitive behavioral therapy (CBT) [54, 59–61]. In particular, CBT is today one of the most investigated approaches, and in light of the recent results, it appears to present the highest efficiency in terms of number of dropout [60, 62] and clinical outcomes [63]. The approach has been therefore selected, in the present work, as a reference to compare the effects obtained by AN patients. Recent researches have shown that CBT enhanced (CBT-E), a specific form of CBT proposed by Fairburn [64], can improve ED symptomatology in adults and youth, focusing mainly on the behavioral level of the disease [65–67].

Despite that CBT and FBT are the most commonly used approaches; we would mention some potential limitations. Scientific studies are, in fact, numerically scarce, and their methodology has to be improved [66]. High dropout rates [67] are reported, and ED patients seem resistant to the creation of a positive therapeutic relationship [68]. Moreover, CBT and FBT do not prioritize the ontogenetic aspect of the disease and the influence of the past experiences in the onset and in the maintenance of the ED. Given the previously introduced relationship between insecure attachment and EDs, we infer that a therapeutic approachable to consider a large time span and the consequential evolution of the disorder is auspicable and necessary to treat the disorders both in prevention and in the treatment phase. Hereby, ED symptoms shall be also evaluated as potential manifestations of traumatic events and of insecure attachments [21, 22, 68–70].

1.2.1. Eyes movement desensitization and reprocessing (EMDR)

As stated from the EMDR International Association (EMDRIA; www.emdria.org), the EMDR is a widely recognized evidence-based psychotherapy implementation. It has firstly been applied to relieve post-traumatic stress disorder (PTSD) symptomatology, and it has evolved to an integrated approach in psychotherapy. Positive results are reported in the scientific scenario also in the treatment of several psychiatric conditions, mental health difficulties, and psychosomatic problems. The paradigm, on which EMDR is grounded, adaptive information processing (AIP), is transverse to the different therapeutic approaches, and it can be integrated with different clinical traditions [71]. The AIP model is based on the assumption that every person, under normal conditions, possesses an innate neurobiological ability that allows

processing and transforming incoming information in adaptive material, which functionally integrates the experience and past information. Traumatic materials can prejudice the subjective integrative capacity of assimilating these experiences in an adaptive way. The eight-phase, three-branched (the past, present and future) process of EMDR re-enables the normal information processing and integration [72].

The main purpose of EMDR is to help a patient to access the unresolved memory and to metabolize it, to turn from a "frozen memory" to the one integrated, neutral, and healthier [73]. In other words, the patient is asked to concentrate on the emotionally disturbing material and, at the same time, to focus on an external stimulus which usually consists in eye movements or other kind of bilateral stimulation, such as tapping or bilateral auditory tones. During this process, the patient is advised to concentrate on thoughts, feelings, or images which emerge. With the proceeding of the treatment, the patient is able to create associations with more adaptive material, until the traumatic memories are integrated in a coherent way [74]. Briefly, the EMDR appears to be able to transform the emotional experience into cognitive experience [75].

In this chapter, we report a specific protocol inserted in a framework linked to the traumatic spectrum. Focus is posed on the analysis and on the elaboration of early relational traumas and on the consequent negative judgments on the self (e.g., "*I do not deserve*," "*I worth nothing*," "*I am not enough*"). One of the basic concept of the implementation of EMDR approach with AN patients is to investigate where and how the symptomatology and the patient's part of control have originated, focusing on its protective function. A gradual approach permits the patient to progressively feel those difficult emotions that have been considered unmanageable by the patient.

2. The pilot study

In light of these considerations, a pilot study was conducted with the aim to compare the usefulness of EMDR related to standard CBT in the treatment of AN in terms of adult representations with respect to attachment.

The hypothesis in this study is that, as the EMDR protocol helps to access and process traumatic memories with an adaptive resolution, the patient will become able to recognize them in the past, promoting an effective reprocessing of the disturbing memories, obtaining an improvement of the AN symptomatology related to the control part.

2.1. Methods

The results presented in this chapter are part of a broader observational clinical comparative study of two active interventions—EMDR therapy and CBT [76]—and are here strictly focused on the important issue of attachment implications. On the whole, the study was carried out over a period of twelve months. AN patients were eligible to receive up to 48 individual therapy sessions of 50 min with an experienced psychotherapist over a maximum 1-year

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period. The average number of therapy sessions received by each participant during the trial was 36 sessions without any patient dropouts from the treatment.

The AN patients were selected from a pool of people who demanded for treatment in a period of 12 months in a clinical center specialized in AN disorder treatment (Centro di terapia EMDR specializzato in anoressia e disturbidell' alimentazione, Milano, Italy).

This study was conducted in a private practice setting, in accordance with the Declaration of Helsinki, under the recommendations and upon the approval of the Research Guidelines of the Centro di Ricerca e Studi in Psicotraumatologia (CRSP) of Bovisio Masciago, MB, Italy, and of the art. Ten of the "National Board of Italian Psychologists Code of Ethics for the Psychologist" regulate research activities for Italian psychologists in private practices (http://www.psy.it/normativa/italy/code_of_ethics_eng.html). The administration of AAI at T0 and at T1 was part of the routine procedure for monitoring the psychotherapeutic process. Before taking part in the research project, all AN patients received complete information concerning the rationale of the study design and provided a written informed consent for their participation in the study. All participants knew their right to withdraw their consensus or their data from the study at any time. Eligibility of patients who express the interest to participate in the study was determined via the EMDR clinical guidelines [73].

Four psychotherapists were involved in the process: two for the EMDR and two for the CBT. They are clinical psychologists qualified as cognitive behavioral psychotherapists who had at least 5 years of clinical experience. EMDR therapists were certified by the accrediting association in Italy (Italian Association of EMDR) to practice the EMDR.

2.2. Interventions

The EMDR treatment followed anorexia nervosa protocol [77] focused on relational traumas and on clinical work with the control part: 2 sessions of resource development prior to EMDR reprocessing and 30–46 sessions of EMDR treatment over the span of one year's time. The main hypothesis is that traumas (both big T and small T traumas) contribute to the development of dysfunctional regulation strategies. Since the control and perfectionism are essential parts of the onset and for the maintenance of dysfunctional cycles in AN, the protocol focuses in creating links between the different parts and help the patients to legitimize them. Moreover, in AN patients, it is possible to detect a fragmentation of the self. Hereby, within the AN-EMDR protocol, it has been included a treatment of different ego states [78].

The CBT treatment was constituted of 32–48 sessions and was provided following manual-based CBT guidelines [62]. The treatment involved three phases: The first is focused on the strategies to address behavioral dysfunction relating eating and weight that enhance the risk of relapse; the second consists in the implementation of cognitive restructuring techniques; and the third is the co-construction of a scheme-based approach in order to address a comprehensive range of relevant issues that widen beyond eating and weight (e.g., relational issues, developmental problems, mood disorder, low self-esteem).

2.3. Participants

Participants were 20 Italian adolescent and young adult patients (average age: 18.80 years, SD = 2.04 for EMDR and 19.70 years, SD = 2.86 for CBT). The selection criteria were female subjects aged 15–25 years, with a DSM-V diagnosis of AN. Exclusion criteria were inability to speak or read Italian, understand the interview questions, the presence of metabolic pathology interfering with eating or digestion (e.g., diabetes) and psychotic disorder.

2.4. Tools

The entire set of questionnaires included the Adverse Childhood Experiences Questionnaire (ACE-Q; [38]—only at T0), the Adult Attachment Interview (AAI), [79], the Eating Disorders Inventory-3 (EDI-3) [80], the Symptom Checklist-Revised (SCL-90-R; [81]), and the Difficulties in Emotion Regulation Scale (DERS; [82]). In this section, the focus is on the ACE-Q, on the AAI, and on the related Reflective Function (RF) and Coherence (Coh) Scale. Further results not relevant in the present investigation are reported elsewhere [76].

The 10 ACE questions assess childhood mistreatments in terms of childhood emotional, physical, and sexual abuse or neglect, and household dysfunction, such as parent violence, substance abuse, parental separation, and incarceration.

The AAI is a semi-structured interview, which assesses adults' state of mind (SoM) in respect of childhood attachment relationships. Throughout 18–21 questions, patients were invited to recover attachment-related autobiographical memories from early childhood (until 12 years) and to evaluate these memories with their current perspective. The interviews were transcribed verbatim and coded by the principal investigator (M.Z.), who was blind respect to the psychotherapeutic approach followed by the AN patients. In this study, we used the Main and Goldwyn's [83] coding system. M.Z. was trained in the Main and Goldwyn AAI coding system [84] by D. Jacobvitz and N. Dazzi and certified as highly reliable by Main and Hesse. The coding system of the AAI [79] classifies the attachment SoMs in three main groups: free or autonomous (F), dismissing (Ds), and entangled or preoccupied (E). Moreover, a further classification which considers eventual incoherent narrative, presence of lapses in the monitoring of the discourse, monitoring of reasoning while recalling one or more traumatic experiences (such as abuses or losses) has been implemented to uncover a partial or absent level of processing of these memories. The interviews are rated on the nine-point Unresolved Scale. A score above 5 is interpreted with a primary unresolved classification (followed by a secondary classification of F, Ds, or E category); a score below 5 is interpreted as a secondary unresolved classification.

The Reflective Functioning Scale [85], assessed by M.Z., was employed in the AAI transcripts. It estimates the degree of complexity of the subject's model of mind and how the patient is competent to reflect about her/himself and others' SoMs. The RF scale is reported as a unique overall score in a range from 1 to 9.

2.5. Statistical analysis

The results were analyzed by the use of the Statistical Package for the Social Sciences (SPSS). Differences in terms of belongingness to a secure group or to an unsecure group between T0

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and T1 in EMDR and CBT sections were compared by use of the McNemar's test. The *p* value was calculated with the continuity correction. One generalized linear model (GLM) repeated-measures multivariate ANOVA (RM-MANOVA) was used to investigate both the main effects and interactions for BMI and RF in the AAI at T0 and at T1, between and within EMDR and CBT groups. For the "within-subjects" part, the treatment results have been reported as a function of treatment time (defined as the psychotherapy sessions from T0 to T1), while for the "between-subjects" part, a comparison between EMDR and CBT psychotherapies is reported. When a correlation has been found, investigation on the possible sources has been executed. Two independent t-tests for the significant scores across intervention type at T0 and at T1, using within-group descriptors.

2.6. Results

2.6.1. Description of the sample at T0

Student's t-test analysis on the samples at T0 revealed the absence of significant differences between EMDR and CBT patients in terms of age, BMI, Coh, and RF score at baseline (all $p > 0.05$). Seventy-five percentage of our sample had three or more ACE (80% in the EMDR group and 70% in the CBT group). In both groups, the ACEs reported in our sample consisted the following: being insulted, put down or humiliated by parents during childhood, growing up in a context where a member had some forms of psychopathologies. At T0, all patients but one (in the CBT group) had an insecure SoM: In the EMDR group, five patients were DS, four were E, and one was U/DS. In the CBT group, one patient was F, four were Ds, three were E, and two were U/Ds. No patients had a secondary U classification.

2.6.2. Differences between T0 and T1 in EMDR and CBT groups

Both treatments (EMDR and CBT) resulted in an increase of BMI and the RM-MANOVA yielded a significant pre/post-main-effect ($V = 0.966$, $F(1, 18) = 515.003$, $p < 0.001$). A significant interaction was found between T0 and T1 and the treatment condition ($V = 0.830$, $F(1, 18) = 88.022$, $p < 0.001$). It emerges that in the EMDR group, the scores at T1 were significantly better than at T0.

Concerning the SoM with respect to attachment, in the EMDR group at T1, 7 on 10 patients became "earned secured," whereas in the CBT group, only one patient move from an unsecure to a secure SoM and the two patients classified as primary. Unresolved continued to have an U classification after 1 year of treatment. The exact McNemar's test reported a statistically significant difference in the proportion of secure SoM pre- and post-intervention in the EMDR group ($p = 0.027$), whereas the difference in terms of becoming secured attached in the CBT group is not meaningful.

Both EMDR and CBT patients have reported higher scores on Coh and RF scales with a significant pre/post-main-effect (respectively, Coh: $V = 0.859$, $F(1,18) = 109.696$, $p < 0.001$, and RF: $V = 0.637$, $F(1,18) = 31.610$, $p < 0.001$) and a remarkable interaction between the pre/post-measures and the treatment conditions (respectively, Coh: $V = 0.438$, $F(1,18) = 14.049$, $p = 0.001$

and RF: V = 0.723, F(1,18) = 47.087, $p < 0.001$). For both scales, the only statistically relevant improvement has been found in the EMDR group (Coh: mean difference between T0 and T1 in the EMDR group:-2.4, SEM = 0.163; 95% CI [-2.769,-2.031], $p < 0.001$; mean difference between T0 and T1 in the CBT group: not statistically significant; RF: mean difference between T0 and T1 in the EMDR group:-2, SEM = 0.298; 95% CI [-2.674,-1.326], $p < 0.001$ and mean difference between T0 and T1 in the CBT group: not statistically significant) (**Table 1**).

	T0				**T1**				
	EMDR		**Control**		**EMDR**		**Control**		
	M	**DS**	**M**	**DS**	**M**	**DS**	**M**	**DS**	**Sig.**
Body mass index (BMI)	14.95	1.35	15.04	1.33	18.98	1.22	17.28	1.34	*§
AAI-Coh	3.4	0.52	3.5	0.52	5.8	0.63	4	0.67	*§
AAI-RF	4.5	0.85	4.4	1.17	6.5	0.97	4.8	1.03	*§

*Significant pre/post-effect, independent of the type of treatment (CBT or EMDR).
§Significant group (CBT vs. EMDR)-by-time (T0 vs. T1) interaction effects.

Table 1. Clinical Data of Participants at T0 and at T1.

3. Conclusions

The present study examined the changes in the attachment state of mind, narrative coherence, and reflective function in a sample of AN patients after about a year of EMDR or CBT psychotherapy. The results presented, despite the small sample size, suggest that EMDR is a valuable effective treatment for ED and AN, in line with other clinical study [86]. Several sources starting from 1980 have reported a net correlation between ED and traumatic experiences. Research has been initially focused on the relation between ED and physical abuses and sexual harassment for the simple correspondence to a parental guidance failure. Recent studies showed that also emotional abuses, repetitive micro-traumatic relational experiences can result in further traumatic symptomatology.

A positive and secure attachment relation in children allows the definition of a self-image that deserves cares. It permits to rely on others in case of need, applying effective coping strategies. On the opposite, an insecure or disorganized attachment relation can result into a negative self-image.AN patients have developed poor strategies in regard to emotional management. This needs to be considered within a psychotherapeutic treatment, with an approach that should go beyond the simple symptomatic elements.

We hypnotize that EMDR method, in respect of other traditional approaches, results in a lower concern and less amount of weight-related thoughts related to body shape, with a consequent improvement on the emotional management and impulses of the patient. It has been suggested that individuals, after EMDR treatments, have lower confusion and apprehension in recognize and answer to emotions and impulses [76, 86]. These achievements

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may contribute to increase the self-esteem and improve the social relations. We consider these preliminary results as a possible option in a therapeutic approachable to provide centrality to the "control" concept in its traditional frame, in its maintenance and possible resolution in a therapeutic framework.

EMDR seems to allow the elaboration of traumatic memories that characterize the AN patient's stories and to actively relate to disturbing memories, helping the resolution of the emotional blocks with a consequent elaboration of the first relations with the caregivers [87–89].

EMDR catalyzes a reconnection with body, emotions, and cognition along a continuum time span. It requires a coherent and smooth narration of the individual life story, without being overhang by negative feeling, such as anger, shame, and fear. These conclusions are supported by the increasing of Cohand RF scores on the AAI transcript of the patients who have participated in the present study.

3.1. Clinical implications

The control as a central aspect in ED has been established around the 1970 with the work of Marilyn Lawrence and Hilde Bruch. Between the 1980 and 2000, the progressive increment of the influence of cognitive-behavioral approach and, therefore, of the increased attempts to modify the ED directly on the symptomatic aspects without considering the traumatic remote sources of the disorders, had temporarily overtaken the study of the comprehension of the ED disorder and the treatment of its remote sources. The here employed protocol considers primarily the life story of the patients and their ability to elaborate and deal with emotions. With respect to traditional methods, a lower emphasis is given to the symptoms of early traumas. There are mainly four parts to consider in the application of EMDR protocol with AN patients.

A first point is to gather information on the previous and present life of the person, carefully analyzing resilience, risk, and maintenance disorder factors. The main focus in this phase is the evaluation of the attachment SoMs and the related risk factors, with a special attention to identify, within the patient's narration, eventual traumatic experiences that could have contributed to generate the AN behavior. A second step is to address and describe the time evolution of the disorder from its origin to the present, focusing on the context surrounding the patients right before the start of AN. It is also helpful, if applicable, to consider the stories of different forms of ED experienced by the patient and their relative treatments. A third part is related to the alimentation record of the family of the patient. From the nursing to the current alimentary habit, also questioning the parents ones. The latter investigation could provide a description of the meaning assigned to the food within the family by the parents and in the role of the food in the patient relation with the parents. The fourth and last part are related to the assessment of the control part, in terms of how it functions and how it protects the balance of personal self of the AN patient. A trust-based relation is necessary in people affected by AN. The patient has to feel to be an active part in the therapeutic process in order to not reiterate the impotence sensation that, in long term, could aggravate the control disorder of the patient. The security feeling allows a more effective exploration, by the patient, of his life story, with a

focus on present and past aspects. It is essential, for the therapist, to listen and welcome all the different possible stories and perspectives to enable a complete narration by the patient. To obtain the trust from a patient, the therapist has to establish a link on the control aspect, defining its role in the resilience of the disorder. In order to induce in a patient the feeling of acceptance, it is necessary to discuss the consequences of the control and to describe its role and functions. It is absolutely required that the therapeutic does not judge the patient. Once a trust relation is established, more specific questions on the control and on its story can be posed with the focus to define the source, in time, of the disorder and on its role in protecting the patient. Furthermore, possible links with the parents or other relevant persons would be investigated. Via specific questions, it is possible to obtain a general view of the ensemble of factors that generated the AN. Allowing the expression of previously ignored feelings, re-elaborating them, and combining the different fragment, it is possible for AN patient to lose the stiff boundaries that they have constructed. Consequently, it will be possible to recognize the right to have needs, as nutrition, food, and relations.

3.2. Limitations and future directions

The present study has a clinical and exploration focus. Due to the low number of samples, it is not possible to satisfy the statistical requirement to represent a complete description of the overall population. Furthermore, a general quantitative description could fail to capture local and/or personal realities, defined by different life styles, society rules, and status quo. Hereby, clinical and methodological indications can provide significant indications and enable method enhancements. Further studies are needed to confirm and expand the present explorative work to obtain a larger clinical validation. A larger sampling would be auspicable to improve the statistical significance of the approach and the inclusion of additional elements that can enlarge the clinical efficacy of the method (e.g., the subjective perceptions of the caregivers' role during the treatments).

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